DOCUMENT RESUME

ED 238 463 JC 830 530

AUTHOR Pipes, V. David
TITLE Evaluation of the Industrial Maintenance Program at Caldwell Community College and Technical Institute.
INSTITUTION Caldwell Community Coll. and Technical Inst., Hudson, NC.
PUB DATE 83
NOTE 50p.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Graduates; Community Colleges; Dropouts; Employer Attitudes; Followup Studies; Graduate Surveys; *Industrial Education; *Maintenance; Participant Satisfaction; *Program Effectiveness; Program Evaluation; *Technical Occupations; Two Year Colleges; Two Year College Students

ABSTRACT

In 1982-83, a study was conducted at Caldwell Community College and Technical Institute to determine whether the objectives of the Industrial Maintenance Program were being met, to measure program success, and to identify aspects needing improvement. Surveys were sent to 30 students who graduated from the program before 1978, yielding a 57% response rate; 57 recent graduates, yielding a 38% response rate; 50 students who left the program before graduation, yielding a 28% response rate; 46 employers of program graduates, yielding a 20% response rate; 11 advisory committee members, yielding a 9% response rate; and both program instructors and the department chair, yielding a 100% response rate. Study results included the following: (1) 76% of all graduates rated instructional quality in the program as good or excellent; (2) 79% of the graduates indicated they would choose the program again; (3) 59% of all graduates had been employed in industrial maintenance; (4) 28% of the early leavers were employed in training-related jobs; (5) 65% of all graduates and early leavers said their training was useful in their present job; and (6) 78% of the employers predicted an increased demand for working in the industrial maintenance field. The study revealed a need for improved instruction in refrigeration, air conditioning, hydraulic and pneumatic troubleshooting, lubrication and maintenance application; more emphasis on electronics, computer use, and business principles; and more practical experience. The questionnaires and survey data are appended. (Author/LAL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED238463

EVALUATION OF THE INDUSTRIAL MAINTENANCE PROGRAM AT CALDWELL COMMUNITY COLLEGE AND TECHNICAL INSTITUTE

1982-1983

V. David Pipes
Program Evaluation Specialist

Caldwell Community College and Technical Institute
Hudson, North Carolina

JC 830 530

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C. W. Tippett

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Abstract

Title: Evaluation of the Industrial Maintenance Program at Caldwell Community College and Technical Institute

Date: 1982-1983

Author: V. David Pipes, Program Evaluation Specialist

Statement of the Problem: This study was one in a series designed for the periodic evaluation of all occupational programs at CCC & TI. The purpose of this and the other studies is the collection of information and judgements to facilitate planning, to aid in the improvement of programs, and to meet accountability demands. Some of the more specific objectives of the evaluation of the industrial maintenance program are to determine whether program objectives are being met, to measure program success in terms of student, instructor, supervisory and employer satisfaction, to identify aspects of the program needing improvement, and to inform the public of the outcomes of educational expenditures.

Procedure: The evaluation process is designed to allow all staff to participate in activities that directly affect them. A Survey Instrument Planning (SIP) committee developed or modified all survey instruments used in the evaluation process. This committee consisted of the department chairperson for industrial science programs, industrial maintenance instructors, the Dean of the Office of Educational Development, the Director of the Learning Resource Center, the Dean of Student Development and the program evaluation specialist.

Information was gathered through surveys of program graduates, employers, the advisory committee, program instructors and the department chairperson. Information from these sources was then compiled and analyzed.

The Results:

Identified Program Strengths

1. Of all graduate respondents, 76% rated the quality of instruction received at CCC & TI as good-to-excellent;

2. of all graduate respondents, 79% said that they would choose CCC & TI again;

3. of all graduate respondents, 59% have been employed in industrial maintenance at some time since graduation;

4. of all early leaver respondents, 28% reported being currently employed in training related jobs indicating the acquisition of marketable skills while in training;

5. of all graduate and early leaver respondents employed outside the field of industrial maintenance, 65% indicated that their training had been useful in their present job;

6. of all graduate respondents employed in industrial maintenance, 94% reported working within a fifty (50) mile radius of CCC & TI;

7. recent graduate respondents gave good ratings to their training in machine shop practice, electrical and electronic troubleshooting, and welding;

8. employer respondents rated graduates the highest on machine shop practice, mechanical troubleshooting, and preventative maintenance;

9. recent graduates gave good-to-excellent ratings to their math instruction; and

10. of all employer respondents, 78% predicted an increasing demand for labor in the industrial maintenance field.

Identified Program Needs

The identified needs of the industrial maintenance program fall into eight (8) categories as follows: instruction, equipment, the Watauga operation, the advisory committee, student development, the LRC, the bookstore, and the Life Skills Center.

Instruction

1. Improved instruction in refrigeration and air conditioning, hydraulic and pneumatic troubleshooting, lubrication, and maintenance applications;

2. increased emphasis on electronics and computer use;

3. increased emphasis on the principles of business operation, the cost of doing business, and on understanding employee rights and responsibilities; and

4. more "hands on," practical experience;

Equipment

1. improved budget allowance for supporting scheduled equipment replacement and repair;

Watauga Operation

1. improved instruction in all areas (43% of recent Watauga graduate respondents rated instruction as adequate-to-poor);

2. establishment of sufficiently equipped shops and facilities;

Advisory Committee

1. consider appointment of new advisory committee;

Student Development

1. increased recruitment of students for the program;

2. increased efforts to help students in applying for and obtaining jobs;

3. improved communication of financial aid options to Watauga students;

4. improved counseling services for Watauga students;

LRC

1. up-dated inventory of audiovisual materials for industrial maintenance topics;

Bookstore

1. increased hours of operation, especially at the beginning of each quarter;

2. more efficient handling of textbook and supply requests;

3. maintenance of a more adequate inventory of materials to meet student needs;

Life Skills Center

1. better advisement and placement of developmental students in appropriate courses, and better preparation of students entering industrial maintenance; and

2. more adequate career counseling and information made available to students.

Evaluation of the Industrial Maintenance Program
at Caldwell Community College and Technical Institute

Introduction

Evaluation of occupational programs is essential to determine their worth and to provide for continued improvement and effectiveness. The word "evaluation" has many different meanings depending upon the need it is designed to meet and whether the focus is on process or product. The working definition used in the evaluation of programs at Caldwell Community College and Technical Institute (CCC & TI) is as stated by Wentling (1980). He defines evaluation as

> ". . . the collection of information and judgements to facilitate planning, to aid in the improvement of programs, and to meet accountability demands."

The Executive Council of CCC & TI has stated that the purpose of program evaluations is to meet the following six objectives:

1. to gather information relative to planning, decision-making and determination of resource allocations for a program;

2. to determine whether program objectives are being met;

3. to identify aspects of a program needing improvement;

4. to measure program success in terms of student and/or employer satisfaction;

5. to inform the public of outcomes of educational investments and expenditures; and

6. to verify that programs are meeting state, federal and voluntary accrediting agency mandates.

A seventh objective to be met by the Business Office is to measure the cost effectiveness of programs.

Evaluation Organization

Evaluation Specialist

The Evaluation Specialist is responsible for coordinating the evaluation process for each data source. This person is also assigned the responsibility of receiving, organizing, maintaining, and reporting data that relate to an instructional program or to individual personnel within a program.

Survey Instrument Planning (SIP) Committee

Program evaluation at CCC & TI is designed to allow all staff to participate in evaluation activities that directly affect them. Faculty members also are represented in planning committees related to the evaluation of programs in which they teach.

At the onset of each program evaluation a Survey Instrument Planning (SIP) committee is appointed. This committee develops or modifies all survey instruments and assists in the coordination of evaluation activities. This committee consists of the following members:

- the department chairperson for the program being evaluated;
- program instructors;
- an LRC representative;
- a Student Development representative;
- the Dean of the Office of Educational Development; and
- the evaluation specialist.

Method of Evaluation

The basic strategy of the evaluation process is to generate input from as many appropriate sources as possible. For the industrial maintenance program these included the following:

- program graduates;
- early leavers, i.e. students who discontinue their studies before completing the program;
- current and potential employers of graduates;
- advisory committee members;
- industrial maintenance instructors; and
- the chairperson of the Industrial Science Department

Information from these sources is then compiled and analyzed. Appropriate reports are distributed to the Executive Council, the department chairperson, the LRC director, the Dean of Student Development, the industrial maintenance instructors, the program advisory committee and the CCC & TI archives.

The Industrial Maintenance Program

As modern industry grows and becomes more sophisticated, there is an increasing demand for skilled personnel trained to install and maintain industrial, electrical, and mechanical equipment. Qualified industrial maintenance engineers are needed by industries and manufacturing companies to perform preventative maintenance and repair on all types of electrical and mechanical equipment.

The first year of the industrial maintenance program consists of a core of courses to provide the student with a general background in the understanding of electrical-mechanical systems and the practical application of skills needed in the field. Special emphasis is given to the use of blueprints and sketches, hand tools and metal-working machines, and measuring and testing instruments. During the second year, the program offers two options of specialization. The mechanical option includes a concentration of machine shop and related courses while the electrical option includes mostly electrical and electronics courses. Graduates of either option in the industrial maintenance engineering program receive an associate in applied science degree.

Survey Process and Response Rates

The Graduate Surveys

Graduates of the industrial maintenance program were divided into two groups: "early" (see Appendix A), and "recent" (see Appendix B). Early graduates were defined as those former students who graduated before 1978. Recent graduates were those who graduated in 1978 or afterwards.

These groups were sent different survey forms. Both surveys were identical through the first nine (9) questions. Beyond question 9, the recent graduate form asked for a more detailed evaluation of the program and related student development and Learning Resource Center (LRC) services.

An initial mailing of surveys was followed by a second mailing to nonrespondents. Of the thirty (30) early graduates contacted, seventeen (17) responded for a response rate of 57%. Of the fifty-seven (57) recent graduates contacted, seventeen (17) or 30% responded. The combined response rate was 39%.

The Early Leaver Survey

Fifty (50) early leavers since 1977 were contacted through two (2) mailings of surveys. Fourteen (14) or 28% returned completed forms. Only those early leavers who had completed at least twenty-five (25) credit hours were sent survey forms. A summary report of this survey may be found in Appendix C.

The Employer Survey

Names of employers were compiled from graduate survey returns and an additional sampling of employers in the Caldwell, Watauga and Catawba counties was surveyed for a total of forty-six (46) employers. Nine (9) employers returned surveys for a 20% response rate. A complete summary of the employer responses can be found in Appendix D.

The Advisory Committee Survey

Surveys were distributed to the eleven (11) members of the program advisory committee. Only one (1) questionnaire was completed and returned for a 9% response rate. Because of the low interest and involvement in the evaluation of the program, consideration should be given to the nomination of new members for the committee in order to revitalize it. Responses from the single advisory committee return can be found in Appendix E.

Supervisory and Instructor Evaluations

Two (2) program instructors and the department chairperson completed questionnaires evaluating the program, and student support ser-

vices including the LRC and the Life Skills Center. The complete summary of these evaluations can be found in Appendix F.

Survey Results

Graduate and Early Leaver Results

The industrial maintenance program is a two (2) site operation. The principal site is on the Hudson campus in Caldwell County. Both day and evening classes are held at this location. The second site is in Watauga County where only night classes are offered. In both the early and recent graduate surveys, 35% of the respondents had attended the Watauga program. However, 64% of the early leaver respondents were from the Watauga program. One (1) recent graduate respondent had attended both programs.

All former students were asked if they had received veteran's benefits while in school. As expected, comparisons of early and recent graduates shows a decline from 82% to 47% respectively in the percentages of students receiving such benefits. However, 71% of the early leaver respondents had received these benefits. The problem was most prevalent in Watauga where all of the early leaver respondents had received benefits.

Early leavers gave a variety of reasons for leaving but the most frequent specific response was that the industrial maintenance classes were not what they had hoped they would be. Four (4) of the five (5) responding in this way had been Watauga students. Another Wataugan stated that he could not get the courses he needed at the Watauga Division. Despite these expressions of frustration, three (3) of the five planned to continue their training in industrial maintenance at CCC & TI.

Employment

Among both early and recent graduates, 59% indicated that they had been employed in their field of training at some time since graduation. Regarding current employment, however, only seven (7) or 41% of the recent graduate respondents reported employment in the field. Of these seven (7), two (2) are self-employed. Also, five (5) of the recent graduates stated that they were unable to get a job in industrial maintenance.

On the other hand, a substantial percentage of the early leavers, 28%, reported that they were currently employed in industrial maintenance. Also, 79% of the early leavers and 86% of the early graduates employed outside the field said that their training had been helpful in their present job. This is an indication that the training received in this program is applicable to a variety of occupations other than industrial maintenance per se. Therefore, the employment of graduates in the field may not be an accurate measure of program success when considered apart from other measures.

Of those graduates employed in industrial maintenance, only one (1) reported working outside of a fifty (50) mile radius from CCC & TI. That individual works at a job approximately sixty (60) miles from CCC & TI.

Ratings of the Quality of Instruction

Overall, both early and recent graduates gave generally high marks to the quality of instruction they received at CCC & TI. Eighty-two percent (82%) of the early graduates and 70% of the recent graduates rated instruction as "good" or "excellent.

However, there were significant differences between the ratings of Watauga and Caldwell respondents. Among early graduates, no Wataugans gave an "excellent" rating to instruction compared to five (5) given by Caldwell respondents. But the most noticeable differences occurred among recent graduates. Caldwell respondents gave only one (1) rating below "good." This was a "poor" rating. In contrast, 43% of the Watauga respondents rated their instruction as only "adequate" or "poor."

These low ratings were reinforced by two (2) remarks. The first stated that the Caldwell program was a good one "but the Watauga Division has little to offer." The second was more direct, saying, "If we are going to have a program in Watauga County, there should be properly equipped shops and spaces."

Would They Do It Again?

Both early and recent graduates were asked if they would choose the same program and the same school if they had it to do over again. Among early graduates there were no significant differences between Watauga and Caldwell graduates. Fifty-three percent (53%) stated that

they would choose the same program again, and an impressive 94% would choose CCC & TI again.

The data from recent graduates reveals a different picture, however. More recent graduates, 70%, than early graduates would choose the same program but only 65% would choose CCC & TI again. Again, the differences between the Watauga and Caldwell recent graduates were significant. Seventy percent (70%) of the Caldwell group said that they would choose CCC & TI again, but only 57% of the Watauga group would do so. These figures provide further evidence of the dissatisfaction of Watauga students and of the deficiencies in that arm of the program.

Recent Graduate and Employer Ratings of Skill Training Areas

Recent graduates and employers were asked to rate eleven (11) areas of skill training. Only three (3) employers felt qualified to rate past graduates on job performance in these areas. This small number makes comparisons of average ratings by graduates and employers non-meaningful. These data sources will, therefore, be considered separately and in terms of the order of ratings from top to bottom.

Employers gave their highest rating to three (3) areas: mechanical troubleshooting, preventative maintenance, and machine shop practice. The lowest ratings and the only ones below 2.0 on a four (4) point scale were given to hydraulic and pneumatic troubleshooting, and refrigeration and air conditioning. Both areas received only 1.7 ratings.

Recent graduates gave their highest ratings to electrical and electronic troubleshooting, welding practice, and machine shop practice. The lowest ratings were given to refrigeration and air conditioning, lubrication, maintenance applications, and hydraulic and pneumatic troubleshooting. It can be seen then that graduates and employers are in relative agreement concerning the best and poorest in three (3) areas of training. Both agreed that the quality of training in machine shop practice was good. Both also agreed on two (2) areas of training which were poor and need improvement. These were refrigeration and air conditioning, and hydraulic and pneumatic troubleshooting.

Also of interest are the differences in the ratings of skill areas by Watauga and Caldwell graduates. While most areas were close in the ratings received, three (3) areas received somewhat diverse ratings. Watauga respondents rated mechanical troubleshooting higher than those from Caldwell, 2.7 and 2.3 respectively. This was the sole area that Wataugans felt better about their training than Caldwell graduates.

Caldwell respondents rated two (2) areas much higher than Wataugans. These areas were machine shop practice, 2.9 and 2.5 respectively, and maintenance application, 2.4 and 2.0 respectively.

Ratings of Related Courses

Industrial maintenance students are required to take a number of related courses outside the core curriculum, and recent graduates were asked to rate these on a four (4) point scale. Both Watauga and Caldwell respondents gave high ratings to math, 3.0 and 3.4 respectively. There was variance in other ratings, however.

Watauga respondents gave much higher ratings than the Caldwell group to two (2) areas: business and industrial safety. Caldwell graduates also rated two (2) areas much higher than the Wataugans: communication skills and physics. The difference in physics, 3.0 to 1.0, may be artificial, however, since only one (1) Wataugan rated this area while six (6) stated that they did not know. The difference here is moot though since physics is no longer included in the curriculum.

Overall, all combined average ratings of related courses were relatively good. In fact, they were generally much higher than the ratings of core training areas.

Equipment and Facilities

Recent graduates were also asked if the equipment and facilities used in their training were sufficient and consistent with that encountered on the job. Once again there were significant differences between Caldwell and Watauga responses. As has been previously noted, Wataugans have been dissatisfied over insufficiently equipped shops. This area of questioning brought this dissatisfaction into sharper focus.

While only one (1) Caldwell respondent said that the supplies and equipment used in training were inconsistent with that found on the job, five (5) of seven (7) or 71% of the Wataugans stated the two (2) as being inconsistent. Furthermore, all Caldwell respondents felt that their training facilities were adequate but 33% of the Wataugans felt that their facilities were inadequate.

Wataugans were also very vocal in expressing their dissatisfaction over inadequate supplies and equipment. One said, "Anything would help; we had nothing." Some mentioned specific needs such as electrical testing equipment, but one summed it up by saying, "We need just about everything."

Instructors and the department chairperson also expressed concerns about equipment and supplies, and the availability and adequacy of first aid supplies. These areas were rated 1.3 on a three (3) point scale, which translates to "needs to improve." They were also concerned that the operational budget for the program was insufficient for supporting scheduled equipment replacement and repairs.

Continuing Education

Relatively small percentages of both early and recent graduates, 29% and 24% respectively, had attended classes or clinics in industrial maintenance since graduation. It is not known whether this is due to lack of interest or to lack of the availability of such clinics.

A variety of suggestions were made by former students concerning classes or clinics which they would like to see CCC & TI offer (see Appendix B, number 21). Most of these centered on electronics and computers. Six (6) suggested electronics specifically. Another three (3) mentioned computers, computer repair and programming. Also, one (1) employer suggested a clinic on the use of microprocessors, and another suggested basic electronics.

Suggestions for Program Improvement

Reinforcing the indications stated above regarding the increasing interest in electronics and computers, many suggestions were made concerning the need for increased program emphasis on electronics. Both former students and employers made suggestions in this area. As one (1) former student stated it, "It appears that more industries are gearing toward sophisticated production machines that are electronically controlled."

Another major topic of suggestions was a call for more "hands-on," "on-the-job," or "practical" experience. However, one (1) respondent said that the program "needs an increase in textbook theory in all areas."

One suggestion was made for the implementation of "some type of apprenticeship program." Such a program has already been implemented. In fact, 89% of the employer respondents indicated that they were aware of this new program.

Employment Outlook

Despite the moderately low training related employment of recent graduates, responses from employers indicate that there will be increasing job opportunities in the industrial maintenance field. Seven (7) of nine (9) or 78% of the employer respondents predicted an increasing demand for labor in this field. The rest, 22%, predicted a stable demand in the next four (4) to five (5) years.

Ratings of Student Support and LRC Services

Recent graduates, early leavers, instructors and the department chairperson were given an opportunity to evaluate all student support and LRC services offered to students.

Caldwell graduates gave "good" average ratings to all LRC functions and were the most complimentary about the "individual assistance from the library staff." Ratings from Watauga graduates were mostly in the "fair" range. The main problem here is that there is no CCC & TI library at the Watauga division. However, all Watauga students have access to the Appalachian State University library. The ratings from the Watauga group pulled down the combined average ratings, but perhaps they should not be considered at all under the circumstances.

Instructors and the department chairperson gave the LRC ratings below 2.0 on a three (3) point scale in three (3) areas. The first two (2) of these areas deal directly with the library functions of the LRC. Both areas received 1.7 ratings. The instructors and supervisor felt that the collection of program materials maintained by the LRC were not as current as they could be and needed some improvement. They also felt that the LRC atmosphere could be made more conducive to student utilization. The third LRC area also receiving a 1.7 rating concerned the appropriateness and currency of audio-visual materials for the program.

Regarding student support functions, there were five (5) areas of principle concern among the respondents. These are job placement, counseling, recruitment, financial aid and the bookstore. The area of most concern was job placement. Recent graduate respondents gave this area their lowest ranking, 1.3 on a four (4) point scale. One respondent complained, "I got no help from job placement." Instructors and the chairperson also felt that this area "needs to improve." They felt that job placement did not prepare program completers to apply for jobs, did not assist instructors in placing students, did not communi-

cate placement services offered, and did not provide feedback to instructors about the results of any placement efforts.

Counseling services were considered "good" by Caldwell graduates, but only received a "fair," 2.3 rating from Watauga respondents. The instructors and chairperson also felt that counseling functions needed some improvement. These concerns were general, however, and it is not certain whether the ratings were directed especially toward the Watauga program or not.

Instructors and the chairperson also expressed concerns that the recruitment of students for the industrial maintenance program was insufficient and needed to improve. In addition, they felt that admissions personnel needed to provide more accurate information to prospective students, and generally needed to promote the program more through brochures, news releases and other sources.

Although graduate respondents gave financial aid good ratings overall, one (1) early leaver stated that, "No one told me about financial aid until I transferred to ASU. It seems that the Watauga Division couldn't care less about their students." Instructors also felt that the financial aid area needed some improvement, especially in terms of providing positive assistance to students in need of financial aid and in using more effective communication skills.

Lastly, concerns were expressed over bookstore operations. One (1) student complained that the bookstore was "closed too often at the beginning" of each quarter. Instructors also felt that bookstore hours needed some improvement. Also needing improvement are the handling of textbook and supply requests, and maintenance of adequate supplies to meet student needs.

Other Areas of Concern

Instructors and the department chairperson indicated three (3) additional areas of concern to them. The first of these was a perception that although the college encourages professional development and provides some time for such activities, it needs to improve the allocation of funds for this purpose.

Certain aspects of instruction made up the second additional area of concern. The instructors felt that instruction in the principles of business operation and the cost of doing business should be improved. They also felt that more should be done in helping students understand employee responsibilities and rights.

Lastly, some concern was expressed over guided studies and career counseling, both of which are Life Skills functions. The instructors felt that more care should be taken in advising and placing developmental students in appropriate courses, and that some improvement was needed in adequately preparing these students to enter the industrial maintenance program. Instructors also felt that the adequacy of career counseling and information available for students needed some improvement.

Conclusions

Identified Program Strengths

The identified strengths of the industrial maintenance program are as follows:

1. of all graduate respondents, 76% rated the quality of instruction received at CCC & TI as good-to-excellent;

2. of all graduate respondents, 79% said that they would choose CCC & TI again;

3. of all graduate respondents, 59% have been employed in industrial maintenance at some time since graduation;

4. of all early leaver respondents, 28% reported being currently employed in training related jobs indicating the acquisition of marketable skills while in training;

5. of all graduate and early leaver respondents employed outside the field of industrial maintenance, 65% indicated that their training had been useful in their present job;

6. of all graduate respondents employed in industrial maintenance, 94% reported working within a fifty (50) mile radius of CCC & TI;

7. recent graduate respondents gave good ratings to their training in machine shop practice, electrical and electronic troubleshooting, and welding;

8. employer respondents rated graduates the highest on machine shop practice, mechanical troubleshooting, and preventative maintenance;

9. recent graduates gave good-to-excellent ratings to their math instruction; and

10. of all employer respondents, 78% predicted an increasing demand for labor in the industrial maintenance field.

Identified Program Needs

The identified needs of the industrial maintenance program fall into eight (8) categories as follows: instruction, equipment, the Watauga operation, the advisory committee, student development, the LRC, the bookstore, and the Life Skills Center.

Instruction:

1. improved instruction in refrigeration and air conditioning, hydraulic and pneumatic troubleshooting, lubrication, and maintenance applications;

2. increased emphasis on electronics and computer use;

3. increased emphasis on the principles of business operation, the cost of doing business, and on understanding employee rights and responsibilities; and

4. more "hands on," practical experience;

Equipment

1. improved budget allowance for supporting scheduled equipment replacement and repair;

Watauga Operation

1. improved instruction in all areas (43% of recent Watauga graduate respondents rated instruction as adequate-to-poor);

2. establishment of sufficiently equipped shops and facilities;

Advisory Committee

1. consider appointment of new advisory equipment;

Student Development

1. increased recruitment of students for the program;
2. increased efforts to help students in applying for an obtaining jobs;
3. improved communication of financial aid options to Watauga students;

LRC

1. up-dated inventory of audiovisual materials for industrial maintenance topics;

Bookstore

1. increased hours of operation, especially at the beginning of each quarter;
2. more efficient handling of textbook and supply requests;
3. maintenance of a more adequate inventory of materials to meet student needs;

Life Skills Center

1. better advisement and placement of developmental students in appropriate courses, and better preparation of students entering industrial maintenance; and
2. more adequate career counseling and information made available to students.

Appendix A

Summary Report of Student Follow-up

of

Industrial Maintenance Graduates before 1978

and

Letter of Transmittal

Summary Report
of the
Early Graduate Survey

The early graduate questionnaire was sent to thirty-nine (39) former students who graduated before 1978. The U.S. Postal Service returned nine (9) letters as undeliverable. Seventeen (17) graduates returned completed questionnaires for a 57% response rate.

1. Respondents graduating from the
   - Caldwell program = 11 (65%)
   - Watauga program = 6 (35%)

2. Year of graduation:

1973	1974	1975	1976	1977
1 (6%)	1 (6%)	2 (12%)	5 (29%)	8 (47%)

3.

Day students	Evening students
7 (41%)	10 (59%)

4. Received VA benefits while at CCC & TI:

Yes	No
14 (82%)	3 (18%)

5. Have been employed in training-related job at some time since graduation:

Yes	No
10 (59%)	7 (41%)

6. Current employment status:

Employed in industrial maintenance	Employed - not in industrial maintenance	Unemployed
9 (53%)	7 (41%)	1 (6%)

7. Location of employment in industrial maintenance:

Service area	In-state but out of area	Out-of-state
9 (100%)	-	-

8. Reasons for unemployment or employment outside of industrial maintenance field:

Found better paying job in another field	Not able to get job in field	Prefer not to work	*Other
3	1	1	2

* - Have not tried to go to work in I.M.
- Would rather work in Boone.

9. If employed outside industrial maintenance field, has training been useful in present job?

Yes	No
6 (86%)	1 (14%)

10. Present job titles:

In field
- Plant electrician
- Electrician
- Set-up man (chisel & circle saws)
- Auto mechanics instructor
- Quality Control Supervisor
- Pipe fitter
- Maintenance mechanic
- Electrician
- Lead man - welder
- Salesman

Out of field
- (2) Quality control engineer
- Surveyor crew chief
- Gear cutter operator
- Trash truck driver
- Owner, construction company
- Supervisor

11. Ratings of quality of instruction:

Caldwell

(4) Excellent	(3) Good	(2) Fair	(1) Poor
5 (45%)	4 (36%)	2 (18%)	-

Watauga

(4) Excellent	(3) Good	(2) Fair	(1) Poor
-	5 (83%)	1 (17%)	-

Combined

(4) Excellent	(3) Good	(2) Fair	(1) Poor
5 (29%)	9 (53%)	3 (18%)	-

12. If you had it to do over again, would you choose the same program?

Yes	No	No Response
9 (53%)	7 (41%)	1 (6%)

13. If you had it to do over again, would you choose CCC & TI?

Yes	No
16 (94%)	1 (6%)

14. Attended classes/clinics in industrial maintenance since graduation:

Yes	No
5 (29%)	12 (71%)

15. Suggestions for classes/clinics for CCC & TI to offer:
(see Appendix B: Recent Graduate Summary, number 20)

16. Suggestions for improving program and other comments:
(see Appendix B: Recent Graduate Summary, number 21)

Caldwell Community College & Technical Institute

1000 Hickory Boulevard, Hudson, North Carolina 28638-1399
Phones: Lenoir-704/728-4323 or Granite Falls-704/396-3311
H. EDWIN BEAM, *President*

Dear Graduate:

There is no substitute for experience, and your experience on the job could be very valuable in helping to improve and update the industrial maintenance program at Caldwell Community College and Technical Institute.

As an alumnus of this institution, please take a few minutes and complete and return the enclosed form. Your responses are needed by Friday, January 14. A stamped and addressed envelope is enclosed for your convenience.

All information you supply will be held in confidence, and your name will never be associated with any response. If you have any questions about this survey, please contact David Pipes at 728-4323. Your cooperation in this improvement will be appreciated.

Sincerely,

H. Edwin Beam

H. Edwin Beam
President

clw

Enclosure

TRUSTEES
Chairman: John A. Forlines, Jr., *Vice Chairman:* Donald W. Lackey; *Secretary:* Conley E. Starnes; *Treasurer:* Myron L. Moore, Jr.
Sandra M. Austin, Robert S. Belk, E. M. Dudley, T. Jack Fox, Allen R. Hefner, Brent B. Kincaid, William M. Lovelace, Jr., Linda M. McGee & SGA President

Appendix B

Summary Report of Student Follow-up

of

Industrial Maintenance Graduates since 1977

and

Letter of Transmittal

Summary Report
of the
Recent Graduate Survey

The recent graduate survey was sent to sixty (60) former students who graduated since 1977. The U.S. Postal Service was unable to deliver three (3) of these. Seventeen (17) graduates returned completed forms for a 30% response rate.

1. Program enrolled in:

Caldwell	Watauga	Both
10 (59%)	6 (35%)	1 (6%)

2. Year of graduation:

1978	1979	1980	1981	1982	No response
3 (18%)	5 (29%)	2 (12%)	-	6 (35%)	1 (6%)

3.

Day students	Evening students	Both
8 (47%)	8 (47%)	1 (6%)

4. Received Veteran's Benefits while at CCC & TI:

Yes	No
8 (47%)	9 (53%)

5. Employed in job related to training at any time since graduation:

Yes	No
10 (59%)	7 (41%)

6. Current employment status:

Employed in industrial maintenance	Employed - not in industrial maintenance	Unemployed
7 (41%)*	7 (41%)	3 (18%)

*2 are self-employed

7. Location of employment in industrial maintenance:

Service area	In-state	Out-of-state
6 (86%)	1 (14%)	0

8. Reasons for employment outside industrial maintenance or unemployment:

In school	Unable to get job in industrial maintenance	Prefer work in another field	Found better pay in another field
1	5	1	3

9. If employed outside industrial maintenance field, has training been useful in present job?

Yes	No	No Response
2	2	3

10. Present job titles:

In field
- (2) Maintenance repairman
- (2) Electrician
- Plant electrician
- Machine operator
- Mechanic

Out of field
- Machinist
- Construction worker
- Letter carrier

11. Ratings of training areas:

Areas	(4) Excellent	(3) Good	(2) Fair	(1) Poor	Interested In Further Training Cald.	Wat.	Caldwell Average	Watauga Average	Combined Average
Electrical & Electronic Troubleshooting	3	10	1	1	6	3	3.0	3.0	3.0
Mech. Troubleshooting	-	9	4	2	2	2	2.3	2.7	2.5
Preventative Main.	1	8	4	3	2	3	2.4	2.4	2.4
Lubrication	-	5	3	7	-	2	2.0	1.7	1.9
Hydraulic & Pneumatic Troubleshooting	-	5	10	1	3	2	2.3	2.1	2.25
Machine Shop Practice	4	4	6	1	3	2	2.9	2.5	2.7
Welding Practice	2	10	4	-	2	2	2.9	2.9	2.9
Refrigeration & Air Conditioning	-	3	7	6	3	2	1.8	1.9	1.8
Maintenance Applications	1	6	3	5	-	3	2.4	2.0	2.2
Blue Print Reading (Mech. & Elect.)	2	9	2	3	1	2	2.7	2.6	2.6
Use of Test Equipment (Mech. & Elect.	1	6	5	3	4	3	2.4	2.2	2.3

12. Ratings of related courses:

Courses	(4) Excellent	(3) Good	(2) Fair	(1) Poor	Don't Know	Caldwell Average	Watauga Average	Combined Average
Business	1	8	4	-	3	2.5	3.0	2.8
Communication Skills	2	6	5	-	3	3.0	2.5	2.8
Human Relations / Psychology	1	11	3	-	1	2.8	3.0	2.9
Math	5	10	1	-	-	3.4	3.0	3.3
Physics	1	4	1	1	9	3.0	1.0	2.7
Welding	1	12	3	-	-	2.9	2.9	2.9
Industrial Safety	2	6	7	-	1	2.5	2.9	2.7

13. Supplies and equipment used in training consistent with that used on the job:

Caldwell:

Yes	No
7	1

Watauga:

Yes	No
2	5

Combined:

Yes	No	No Response
9 (53%)	7 (41%)	1 (6%)

Suggested needs:

- Caldwell
  - Program needs better air conditioning textbooks
  - Better hydraulic equipment

- Watauga
  - Equipment and supplies were poor
  - Watauga Division had little of any type of equipment. Because of this I had to change to main campus.
  - Anything would help; we had nothing.
  - Very little test equipment available
  - Need electrical testing and training equipment
  - We need just about everything

14. Facilities used in training adequate:

Caldwell:

Yes	No
9	0

Watauga:

Yes	No
4	2

Combined:

Yes	No	No Response
13	2	0

Comments:
- (Watauga) I had one class meet in the boiler room because of no space.

15. Ratings of student support areas:

Courses	(4) Excellent	(3) Good	(2) Fair	(1) Poor	Don't Know	Caldwell Average	Watauga Average	Combined Average
Admissions Process	1	12	3	-	-	2.8	3.0	2.9
Registration Process	1	9	5	1	-	2.8	2.4	2.6
Financial Aid Assistance	2	3	-	1	10	3.5	2.8	3.0
Counseling Services	1	4	3	1	7	2.7	2.3	2.6
Career Information	2	2	4	1	6	2.8	2.3	2.6
Job Placement	-	1	1	8	6	1.5	1.0	1.3
Student Activities	-	5	2	4	5	2.5	1.0	2.1
Student Records/Transcripts	1	11	1	-	3	2.9	3.3	3.0
Bookstore	-	6	6	2	2	2.4	2.0	2.3
Parking	1	9	4	-	2	2.7	3.0	2.8
Food Services	-	1	6	3	5	1.9	1.5	1.8

Comments:
- Bookstore closed too often at beginning of quarter
- I got no help from job placement
- Student activities are targeted for one group

16. Ratings of library services:

Courses	(4) Excellent	(3) Good	(2) Fair	(1) Poor	Don't Know	Caldwell Average	Watauga Average	Combined Average
Books	-	11	1	1	1	3.0	2.4	2.6
Magazines	-	11	-	1	2	3.0	2.5	2.8
Audiovisual materials (films, slides, tapes, etc.)	1	6	6	-	1	3.0	2.2	2.6
Audiovisual equipment	-	7	5	1	1	2.9	2.0	2.5
Charts Manuals	-	7	3	2	2	2.8	2.0	2.4
Library orientation	-	6	3	-	5	2.8	2.3	2.7
Individual assistance from library staff	2	8	1	-	3	3.3	2.7	3.1

Comments:
- No library at Watauga Division

17. Ratings of quality of instruction:

Caldwell

Excellent	Good	Adequate	Poor
2 (22%)	6 (67%)	-	1 (11%)

Watauga

Excellent	Good	Adequate	Poor
-	4 (57%)	2 (29%)	1 (14%)

Combined

Excellent	Good	Adequate	Poor	No Response
2 (12%)	10 (58%)	2 (12%)	2 (12%)	1 (6%)

18. If you had it to do over again, would you choose the same program?

Caldwell:			Watauga:	
Yes	No	No Response	Yes	No
6 (60%)	3 (30%)	1 (10%)	6 (86%)	1 (14%)

Combined:		
Yes	No	No Response
12 (70%)	4 (24%)	1 (6%)

19. If you had it to do over again, would you choose CCC & TI?

Caldwell:			Watauga:	
Yes	No	No Response	Yes	No
7 (70%)	1 (10%)	2 (20%)	4 (57%)	3 (43%)

Combined:		
Yes	No	No Response
11 (65%)	4 (24%)	2 (12%)

20. Attended classes/clinics in industrial maintenance:

Caldwell:		Watauga:	
Yes	No	Yes	No
3	5	1	6

Combined:		
Yes	No	No Response
4 (24%)	11 (65%)	2 (12%)

21. Suggestions from all former student respondents for classes/clinics for CCC & TI to offer:
- (6) Electronics - digital readouts/semi-conductor technology
- Computers
- Personal computer repair
- Computer programming
- Industrial DC motor controllers & other types of curcuit boards
- Courses in applied electricity
- Up-date classes in welding
- Air conditioning
- Expand physical education to swimming
- More outdoor sports and weight training

22. Suggestions for improving program from all former student respondents:

Curriculum
- Students definitely need more concentration in electronics. It appears that more industries are gearing toward sophisticated production machines that are electronically controlled.

- Offer electrical, mechanical, and civil engineering technology.
- The program could benefit from more math requirements, especially geometry and algebra.
- More classes in welding and electrical training.
- Offer every course in electricity and machine shop every quarter.
- More management oriented classes.
- Program has too many classes that are the survey type. More instruction in specific areas would be more helpful.
- Need some type of apprenticeship program.
- More classes related to factory work.
- The classes were not in the proper order. For example, basic electronics before the math courses we needed to take them; also learning physics before algebra.
- Offer classes that students need. In the middle of a quarter, find out what students need for the next quarter and make the schedule to go along with students, not the coordinators.
- Offer classes that the old maintenance people can take.
- Next time you start an industrial maintenance program, make sure you will be able to provide the classes that are needed to complete the program.
- Offer courses that will transfer to larger colleges and universities.

Instruction

- More practical experience in the electrical portion of the program.
- Let classes have more on-the-job training and less paperwork.
- More hands-on experience with mechanical repair.
- More hands-on maintenance problems, especially the repair type.
- Program needs an increase in textbook theory in all areas.
- More machine shop practice.
- Courses need textbooks and lab manuals that agree with available equipment.
- Better hydraulics training.
- Better air conditioning course.
- Improve air conditioning program in more practical applications. They are trained the same way as auto mechanics are trained.

Equipment

- Provide more test equipment for the electrical program.
- More up-to-date equipment.
- Have a sufficient amount of shop tools and equipment that is operational.

Other Comments

- Overall, I thought it was a very good program.
- I think that the changes made in the program after I graduated will greatly improve it.
- I understand that a lot of changes have taken place since I was in the program and that it is better and has better instructors.
- Emphasis should be placed more on educating and not on minimum reading requirements to get VA benefits. For this to be accomplished, management and teachers must express and relate to this philosophy.
- Hire only qualified instructors.
- The main campus has a good program that needs little changes, but the Watauga Division has little to offer.
- If we are going to have a program in Watauga County, there should be properly equipped shops and spaces.

Caldwell Community College & Technical Institute

1000 Hickory Boulevard, Hudson, North Carolina 28638-1399
Phones: Lenoir-704/728-4323 or Granite Falls-704/396-3311
H. EDWIN BEAM, *President*

Dear Graduate:

You, as a former student of Caldwell Community College and Technical Institute, are one of our most valuable sources for suggestions on how to improve our industrial maintenance program. Please help us to better serve students and the community by completing and returning the enclosed form by Friday, February 11. A stamped, addressed envelope is enclosed for your convenience.

If you desire to sign your name, a place is provided. If you wish for your responses to be anonymous, do not complete the name and address section of the form. All information you supply will be held in confidence, and your name will never be associated with any response. Your answers will only be part of a composite report in which individual replies are not identified.

If you have any questions about this survey, please contact David Pipes at 728-4323. Your cooperation in this improvement effort will be appreciated.

Sincerely,

H. Edwin Beam

H. Edwin Beam
President

clw

Enclosure

TRUSTEES:
Chairman: John A. Forlines, Jr.; *Vice Chairman:* Donald W. Lackey; *Secretary:* Conley E. Starnes; *Treasurer:* Myron L. Moore, Jr.
Sandra M. Austin, Robert S. Belk, E. M. Dudley, T. Jack Fox, Allen R. Hefner, Brent B. Kincaid, William M. Lovelace, Jr., Linda M. McGee & SGA President

Appendix C

Summary Report

of

Industrial Maintenance Early Leavers since 1977

and

Letter of Transmittal

Summary Report
of the
Early Leaver Survey

All students since 1977 who had completed a minimum of twenty-five (25) credit hours in the industrial maintenance program before discontinuing their studies were surveyed. The questionnaire was sent to sixty-one (61) early leavers. The U.S. Postal Service returned eleven (11) letters as undeliverable. Of the remaining fifty (50), fourteen (14) returned completed questionnaires for a 28% response rate.

1. Respondents from the
   - Caldwell program = 5 (36%)
   - Watauga program = 9 (64%)

2.

Day students	*Evening students
4 (29%)	10 (71%)

*Of the 10, 9 were Watauga students

3. Received VA benefits while at CCC & TI:

Caldwell:		Watauga:	
Yes	No	Yes	No
1	4	9	-

Combined:

Yes	No
10 (71%)	4 (29%)

4. Reasons for discontinuing studies:

Employment	Home/family needs	Military service	Financial problems
2	1	1	2

I.M. classes were not not what I'd hoped they'd be	Related courses too difficult	Received all the training I needed	*Other
5 (4 Watauga)	2	1	5

* - tired of going every night
  - I couldn't get the courses I needed (Watauga)

5. Current employment status:

Full-time	Part-time	Unemployed
11 (78%)	2 (14%)	1 (7%)

6. Reasons for part-time employment or unemployment:

Unable to get full-time job	Prefer to work part-time	Dislike industrial maintenance work
1	1	1

7. Currently employed in industrial maintenance field:

Yes	No
4 (28%)	9 (64%)

8. Has training been helpful in present job?

Yes	No
11 (79%)	2 (14%)

9. Who helped you get your job?
   - (5) Friend
   - Job placement at CCC & TI
   - (5) Other
     - (3) had job before attending
     - self employed
     - Director of Watauga Division

10. Do you plan to continue training in industrial maintenance?

Yes	No
5 (36%)	9 (64%)

If yes, where?
- (4) CCC & TI
- Western Carolina

11. Suggestions for improving student support services:
    - Have bookstore locally at Watauga.
    - Help make students more aware of financial aid available to them. No one told me about financial aid until I transferred to ASU. It seems that the Watauga Division couldn't care less about their students.

12. Comments and suggestions for improving program:
(see Appendix B: Recent Graduate Summary, number 21)

Caldwell Community College & Technical Institute

1000 Hickory Boulevard, Hudson, North Carolina 28638-1399
Phones: Lenoir-704/728-4323 or Granite Falls-704/396-3311
H. EDWIN BEAM, *President*

Dear Former Student:

You, as a former student of Caldwell Community College and Technical Institute, are one of our most valuable sources for suggestions on how to improve our industrial maintenance program. Please help us to better serve students and the community by completing and returning the enclosed form by Friday, February 11. A stamped, addressed envelope is enclosed for your convenience.

If you desire to sign your name, a place is provided. If you wish for your responses to be anonymous, do not complete the name and address section of the form. All information you supply will be held in confidence, and your name will never be associated with any response. Your answers will only be part of a composite report in which individual replies are not identified.

If you have any questions about this survey, please contact David Pipes at 728-4323. Your cooperation in this improvement effort will be appreciated.

Sincerely,

H. Edwin Beam

H. Edwin Beam
President

clw

Enclosure

TRUSTEES:
Chairman: John A. Forlines, Jr.; *Vice Chairman:* Donald W. Lackey; *Secretary:* Conley E. Starnes; *Treasurer:* Myron L. Moore, Jr.
Sandra M. Austin, Robert S. Belk, E. M. Dudley, T. Jack Fox, Allen R. Hefner, Brent B. Kincaid, William M. Lovelace, Jr., Linda M. McGee & SGA President

Appendix D

Summary Report

of the

Industrial Maintenance Employer Survey

and

Letter of Transmittal

Summary Report
of the
Industrial Maintenance
Employer Survey

The employer survey was sent to forty-six (46) present and potential employers of industrial maintenance program graduates. Of these nine (9) returned completed surveys for a 20% response rate.

	Yes	No
1. Now employing graduates of the industrial maintenance program at Caldwell Community College and Technical Institute?	2 (22%)	7 (78%)
2. Employed CCC & TI industrial maintenance graduates in the past?	3 (33%)	6 (67%)

3. Number of CCC & TI industrial maintenance graduates ever in your employ:

Number of Employers	Number of Employees
1	4
1	2
1	No Response

4. General assessment of graduates on the following skills:

	(4) Excellent	(3) Good	(2) Fair	(1) Poor	Average
Electrical &/or Electronic Troubleshooting	-	1	1	1	2.0
Mechanical Troubleshooting	-	3	-	-	3.0
Preventative Maintenance	1	1	1	-	3.0
Lubrication	-	1	2	-	2.3
Hydraulic & Pneumatic Trouble-shooting	-	-	2	1	1.7
Machine Shop Practice	1	1	1	-	3.0
Welding Practice	-	2	1	-	2.7
Refrigeration & Air Conditioning	-	-	2	1	1.7
Maintenance Applications	1	-	2	-	2.7
Blue Print Reading (Mechanical & Electrical	-	1	1	1	2.0
Use of Test Equipment (Mechanical & Electrical)	1	-	1	1	2.3

5. In general, how would you rate the performance of industrial maintenance graduates from CCC & TI with graduates from other school?

Much better	1
Some better	
About the same	1
Slightly poorer	1
Much poorer	

6. Names of schools or programs where most industrial maintenance employees are trained:
   - (6) On-the-job
   - (3) CVTC
   - (2) CCC & TI

7. Main sources for new employees:
   - (5) Applicant applies on own initiative
   - (3) Employment Security/Job Service
   - (2) Mutual acquaintance
   - College faculty member

8. Estimate of labor demands for industrial maintenance technicians in the next 4-5 years:

Increasing demand	7 (78%)
Stable demand	2 (22%)
Decreasing	-

9. Are you aware of the new industrial maintenance apprenticeship program?

Yes	No
8 (89%)	1 (11%)

10. What classes/clinics would you like to see offered through CCC & TI in the future?
    - Introductory program in use of microprocessors
    - Basic electronics
    - Maintenance machine shop
    - Up-date in all trades

11. Would you send your employees to the classes you have suggested?

Yes	No	No Response
7 (78%)	-	2 (22%)

12. Suggestions for improving program:
    - Need additional emphasis on electrical and electronics programs
    - Stronger classes in electronics

Caldwell Community College & Technical Institute

1000 Hickory Boulevard, Hudson, North Carolina 28638-1399
Phones: Lenoir-704/728-4323 or Granite Falls-704/396-3311
H. EDWIN BEAM, *President*

Dear Employer:

Your help is needed! We are currently conducting a study to evaluate the effectiveness of the Industrial Maintenance program offered to Caldwell Community College and Technical Institute students. As an employer, your opinions are valuable.

Will you please take a few minutes to complete this form and help us in our efforts to better serve students and the community? No employer will be identified in the results of this study, and all responses will be kept in complete confidence.

Your answers will help us to identify the strengths and weaknesses of our present Industrial Maintenance program and plan for the future. You will be making a valuable contribution to the improvement of the training of future students. Please complete and return the forms by Monday, March 14. A stamped, addressed envelope is enclosed for your convenience.

Your cooperation will be appreciated.

Sincerely,

H. Edwin Beam
President

kdw

Enclosure

TRUSTEES
Chairman: John A. Forlines, Jr.; *Vice Chairman*: Donald W. Lackey; *Secretary*: Conley E. Starnes; *Treasurer*: Myron L. Moore, Jr.
Sandra M. Austin, Robert S. Belk, E. M. Dudley, T. Jack Fox, Allen R. Hefner, Brent B. Kincaid, William M. Lovelace, Jr., Linda M. McGee & SGA President

Appendix E

Summary Report of Advisory Committee Evaluation of the Industrial Maintenance Program and Sample Letter of Transmittal

Summary Report

of

Advisory Committee Member Evaluation

of the

Industrial Maintenance Program

Eleven (11) advisory committee members were sent evaluation forms. Only one (1) form was completed and returned for a 9% response rate.

Please rate the following:

	Excellent (4)	Good (3)	Adequate (2)	Poor (1)
1. Student preparation for seeking employment (such as completion of application, presentation of self, interview process).	-	-	1	-
2. Student technical preparation for entry-level employment (skills and knowledge).	-	-	-	1
3. Student preparation concerning work habits, attitude and work quality.	-	-	1	-
4. College response to labor force and employment training needs for industrial maintenance.	-	-	1	-
5. College provision for training and upgrading personnel currently employed in industrial maintenance.	-	-	-	1
6. College response to changing technology and procedures in industrial maintenance.	-	-	-	1
7. Adequacy and relevancy of equipment and facilities to the on-the-job situation.	-	-	1	-
8. College efforts in recruiting minority and disadvantaged students.	-	1	-	-

Please answer the questions below.

9. What are the principal strengths of this program?

- Gives a good basic understanding of maintenance functions and terminology.

10. What are the principal needs for improvement in the program?

- Application of classroom theory with on job training would benefit the program tremendously. All aspects of maintenance become clearer when applied in the work field.

- A closer study into the combining of two or more mechanical functions and how they relate or act upon one another would be beneficial training for successful mechanical skills.

11. During the past, has your business/shop hired students from the industrial maintenance program at CCC & TI?

YES 1 NO -

If yes, what is your professional opinion of these students?

- Excellent
- Good
1 Adequate
- Poor

12. Has your advisory committee helped to improve the instructional program in industrial maintenance (such as assisting staff on curriculum development or revision, arranging field trips, identifying work experience and employment opportunities?

YES 1 NO -

13. In what ways could the advisory committee improve its assistance to the program?

- Review curriculum

- Have discussions with instructors, as to their teaching goals, ideas concerning curriculum and future needs of the course.

14. How long have you been a member of this committee? 2 years

15. Do you consider your membership on this committee worthwhile?

YES 1 NO -

Appendix F

Summary Report

of the

Instructor/Supervisory Evaluations

Summary Report
of the
Instructor /Supervisory Evaluation of the
Industrial Maintenance Program
and Student Support Services

Please rate the following and make comments, especially concerning areas rated "Needs to Improve."

	Needs No Improvement (3)	Needs Some Improvement (2)	Needs To Improve (1)	Not Applicable (0)	Average
I. Program					
A. Goals and Objectives					
1. The program reflects the philosophy and purpose of the institution and the needs of the students.	1	2	-	-	2.3
2. Written program goals are understood and committed to by administrators, counselors and instructors.	1	2	-	-	2.3
3. Copies of the school catalog are readily available to faculty and students.	3	-	-	-	3.0
4. Written program objectives are on file and stated in measurable terms.	1	1	1	-	2.0
5. Written program objectives are readily available to current and potential students.	-	2	1	-	1.7
6. Labor market and community needs are used as a basis for planning and evaluating program and course content.	2	1	-	-	2.7
7. Professional /industry standards and trends are used to develop and evaluate the program and course content.	1	2	-	-	2.3
8. There is evidence of liaison between each instructor and the department chairperson and the respective business or industry.	1	1	1	-	2.0
9. The Operational Budget for the Program					
- is planned with instructor input.	2	1	-	-	2.7
- is adequate for achieving program objectives.	-	-	2	1	1.0
- is based on program priorities.	1	2	-	-	2.3
- supports scheduled equipment replacement and repair.	-	1	2	-	1.3
10. Procedures for handling emergencies are clearly understood by program personnel.	-	2	1	-	1.7
B. Instruction					
1. The instructional program provides learning experience for skills development that is essential for entry level into the occupational field.	1	2	-	-	2.3
2. Course outlines and behavioral performance objectives have been developed and are used to keep students aware of their progress.	1	1	1	-	2.0
3. Records showing the progress of the individual student are maintained by instructors.	1	2	-	-	2.3
4. There is a continuous effort by instructors to determine the reliability and validity of the methods of evaluation.	1	2	-	-	2.3
5. The number of instructors is adequate to meet individual student needs.	1	2	-	-	2.3

	Needs No Improvement (3)	Needs Some Improvement (2)	Needs To Improve (1)	Not Applicable (0)	Average
6. Adequate academic counseling is available for students.	1	2	-	-	2.3
7. The instructional staff, full and part time, is qualified by appropriate degrees, experience and /or certification.	1	2	-	-	2.3
8. Health emphasis, job safety, and fire prevention are an integral part of instruction.	1	2	-	-	2.3
9. The program includes instruction which helps students understand employee responsibilities and rights.	-	1	2	-	1.3
10. The program includes instruction which helps students understand the principles of business operation and cost of doing business.	-	1	2	-	1.3
11. Related support courses outside the core curriculum are relevant to desired program outcomes.	1	1	1	-	2.0
12. There is evidence of cooperation between departments to insure the proper scope and sequence of related support courses.	1	2	-	-	2.3
13. Assistance is provided for students with special needs.	1	1	1	-	2.0
C. Equipment, Supplies and Facilities					
1. To ensure skill proficiency, sufficient practice is provided for the student with appropriate and suitable equipment similar to that currently accepted in business and industry.	-	2	1	-	1.7
2. All instructional equipment and supplies are safe, functional and well maintained.	1	2	-	-	2.3
3. Instructional equipment and supplies are in sufficient supply to serve the needs of students.	-	1	2	-	1.3
4. The program has a system of supply and equipment inventory which includes instructional and non-instructional items.	-	3	-	-	2.0
5. First aid supplies are readily available and accessible.	-	1	2	-	1.3
6. Instructional facilities (excluding equipment)					
- are functional	-	3	-	-	2.0
- are adaptable to changing instructional approaches and special student needs	-	3	-	-	2.0
7. Scheduling of facilities and equipment for the program is planned for optimum use.	1	-	2	-	1.7
8. There is adequate lighting, heat and ventilation in program classrooms, laboratories and /or shop areas.	3	-	-	-	3.0

Comments:
- (#8) - Process piping and electrical outlets are much needed.

D. Advisory Committee					
1. The program advisory committee meets at least once per year.	1	1	1	-	2.0
2. The advisory committee has provided advice which addressed at least one problem within the last academic year.	1	1	-	-	2.5

	Needs No Improvement (3)	Needs Some Improvement (2)	Needs To Improve (1)	Not Applicable (0)	Average
3. The college has responded to recommendations made by the advisory committee.	1	2	-	-	2.3
4. The advisory committee members are representative of the profession or industry for which training is provided.	1	2	-	-	2.3
E. Professional Development					
1. The college encourages professional development activities for program personnel.	1	2	-	-	2.3
2. The college allocates funds for participation in professional development activities.	-	1	2	-	1.3
3. The college makes time available for participation in professional development activities.	1	2	-	-	2.3
II. Student Development					
A. Recruitment / Admissions					
1. Recruitment of students for the program is sufficient.	-	1	2	-	1.3
2. The program receives timely publicity through brochures, news releases and other sources.	-	2	1	-	1.7
3. The admissions process is efficient and equitable.	1	2	-	-	2.3
4. Admissions personnel provides accurate information to current and prospective students about the program.	1	1	1	-	2.0
5. Admissions personnel utilize effective interpersonal communications skills.	1	2	-	-	2.3
B. Registrar					
1. Registration of students is efficient and causes a minimal amount of confusion for students.	1	1	1	-	2.0
2. Student records /transcripts are maintained and transmitted in a confidential and timely manner.	3	-	-	-	3.0
3. The registrar provides an effective system for receiving and processing student grades.	3	-	-	-	3.0
4. The registrar utilizes effective interpersonal communications skills.	3	-	-	-	3.0
C. Counseling and Guidance Services					
1. Adequate personal counseling is available for students.	-	2	1	-	1.7
2. Services are available and accessible for both day and evening students.	1	1	1	-	2.0
3. Services are provided by a qualified, knowledgeable staff.	1	2	-	-	2.3
4. Counseling personnel					
- are available on a regular basis to you for counsel and assistance regarding student problems.	1	1	1	-	2.0
- are effective in assisting you with problem situations.	-	2	1	-	1.7
- provide appropriate feedback to you after counseling with student.	-	2	1	-	1.7
- utilize effective interpersonal communication skills.	-	2	1	-	1.7

	Needs No Improvement (3)	Needs Some Improvement (2)	Needs To Improve (1)	Not Applicable (0)	Average
D. Financial Aid Officer					
- provides positive assistance to students in need of financial aid.	1	2	-	-	2.3
- adequately communicates available financial aid information.	2	1	-	-	2.7
- utilizes effective interpersonal communication skills.	-	3	-	-	2.0
E. Job Placement					
- effectively communicates the services offered through the job placement.	-	1	2	-	1.3
- effectively assists you in the placement of students.	-	1	2	-	1.3
- provides feedback to you about results of placement effort.	-	-	3	-	1.0
- prepares program completers desiring employment to apply for a job.	-	-	3	-	1.0
- utilizes effective interpersonal communication skills.	1	1	1	-	2.0

Comments:

- We need someone to handle placement.

III. Learning Resource Center (LRC)					
A. Library					
1. The LRC provides library orientation upon request.	2	1	-	-	2.7
2. The learning resource center includes sufficient materials for program instruction.	-	3	-	-	2.0
3. LRC materials include such items as audio visual aids and equipment; reference books; industrial and technical manuals; and trade, technical, and professional periodicals.	1	2	-	-	2.3
4. A current collection of program materials is maintained by the LRC.	-	2	1	-	1.7
5. An adequate variety of appropriate periodicals is provided.	1	1	1	-	2.0
6. A plan exists for annually evaluating the services of the learning resource center.	-	2	-	-	2.0
7. The LRC atmosphere is conducive to student utilization of LRC resources.	-	2	1	-	1.7
8. The LRC staff readily provides assistance and utilizes effective interpersonal communication skills.	1	2	-	-	2.3
B. Media Services					
1. A full range of media services is provided to assist instructors.	2	1	-	-	2.7
2. The audio visual materials in the LRC are current and appropriate for the needs of the program.	-	2	1	-	1.7
3. An adequate and well maintained inventory of media equipment is available.	1	2	-	-	2.3
4. Media personnel provide effective assistance when requested.	3	-	-	-	3.0
5. Media personnel utilize effective interpersonal communication skills.	2	1	-	-	2.7

	Needs No Improvement (3)	Needs Some Improvement (2)	Needs To Improve (1)	Not Applicable (0)	Average
C. Printing Service Personnel					
– reproduces and collates teacher tests and other instructional materials efficiently.	3	–	–	–	3.0
– schedules work and produces within requested time limit.	3	–	–	–	3.0
– produces work of good quality.	3	–	–	–	3.0
– assists instructors in reproducing materials.	2	1	–	–	2.7
– utilizes effective interpersonal communication skills.	–	3	–	–	2.0
IV. Life Skills Center					
A. General					
1. Services provided by the Testing Center, Advancement Lab, etc. are effectively communicated to students and instructors.	2	1	–	–	2.7
2. Adequate career counseling and information is available for students.	–	3	–	–	2.0
3. Life Skills personnel utilize effective interpersonal communication skills.	2	1	–	–	2.7
B. Testing Center					
1. The Testing Center handles testing and placement of entering students in an efficient and confidential manner.	3	–	–	–	3.0
2. The Testing Center meets the instructional needs of the program instructors.	2	1	–	–	2.7
C. Guided Studies					
1. Developmental students are properly advised and placed in appropriate courses.	2	–	1	–	2.3
2. Developmental students are adequately prepared to enter the program.	1	2	–	–	2.3
V. Bookstore					
A. The bookstore keeps adequate operating hours to serve student needs.	1	2	–	–	2.3
B. The bookstore handles textbook and supply requests in an efficient and timely manner.	1	2	–	–	2.3
C. The bookstore maintains appropriate and adequate supplies of materials (other than textbooks) to meet student needs.	1	2	–	–	2.3
D. Bookstore personnel utilize effective interpersonal communication skills.	2	1	–	–	2.7

ERIC® CLEARINGHOUSE FOR
JUNIOR COLLEGES
UNIVERSITY OF CALIFORNIA

JAN 20 1984

8118 Math-Sciences Building
Los Angeles, California 90024